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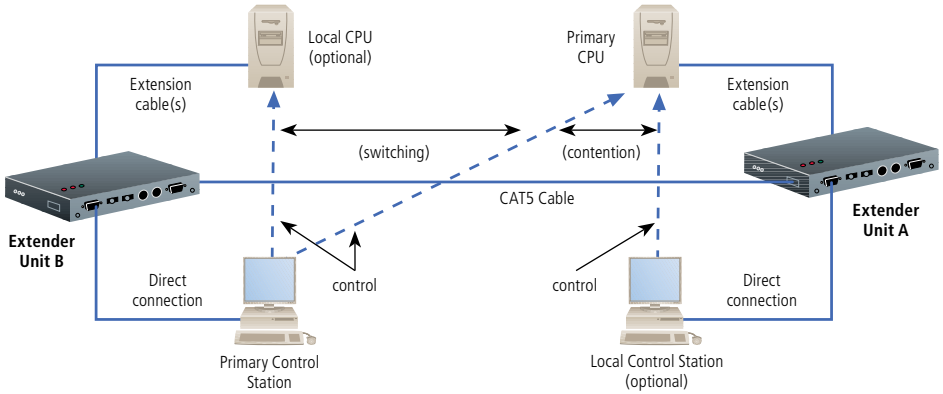
ServSwitch Wizard Multimedia KVM Extender

Put up to 200 meters (655 feet) of CAT5 cable between a local CPU and a remote user station—including audio and serial extension!

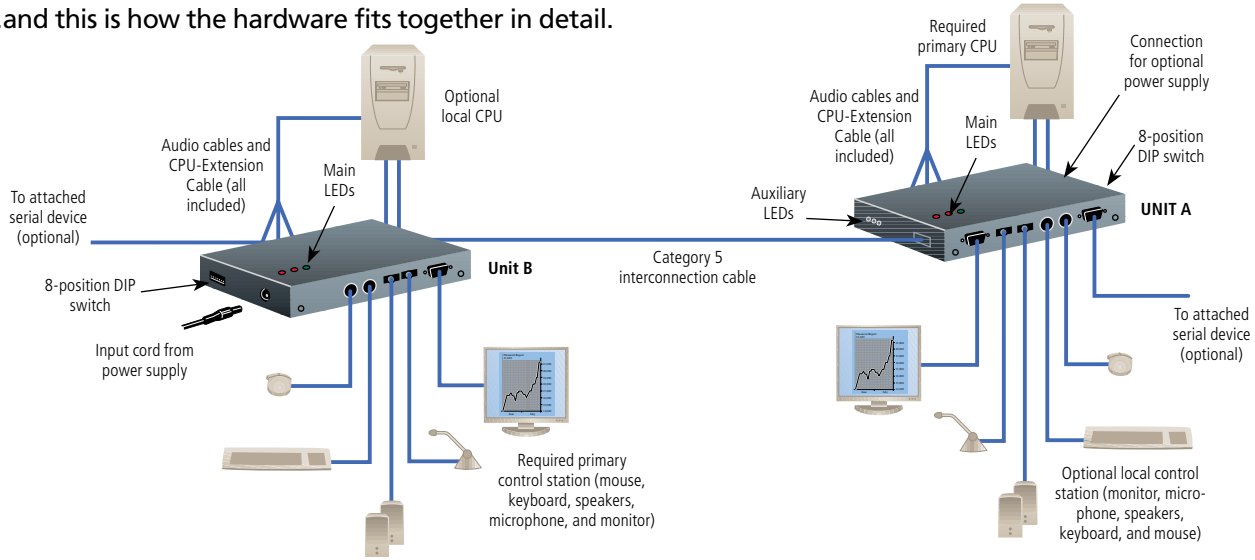
FEATURES

- Control a primary PC CPU from a primary control station (keyboard, monitor, and mouse) across as much as 200 m (655 ft.) of Category 5 cable.
- You can also attach a local CPU that the primary station can switch to.
- And you can attach a local station that shares the primary CPU.
- Carries and switches stereo audio and microphone signals.
- Carries RS-232 signals.
- Supports video resolutions up to 1600 x 1280.
- Optional password protection.

In an Extender system, these are the basics of how attachment and control work…



…and this is how the hardware fits together in detail.


Optional local CPU
Audio cables and CPU-Extension Cable (all included)
Main LEDs
To attached serial device (optional)
8-position DIP switch
Input cord from power supply
Unit B
Category 5 interconnection cable
Required primary control station (mouse, keyboard, speakers, microphone, and monitor)
Required primary CPU
Audio cables and CPU-Extension Cable (all included)
Main LEDs
Connection for optional power supply
8-position DIP switch
Auxiliary LEDs
UNIT A
To attached serial device (optional)
Optional local control station (monitor, micro-phone, speakers, keyboard, and mouse)

OVERVIEW

There are a lot of gizmos around that do keyboard/video/mouse extension. But how many of them also extend audio and serial signals? How many also support switching to a local CPU, or contention with a local control station? How about support for password security and video resolutions up to 1600 x 1280? How many are the size of a pair of small books? And how many come with virtually every cable and adapter you'll need to make all your connections?

The ServSwitch™ Wizard Multimedia KVM Extender does all this and more. Attach a primary IBM® compatible computer CPU to the Extender's "Unit A." Then plug a primary keyboard/ monitor/mouse control station into its "Unit B." Then run as much as 200 meters (655 ft.) of Category 5 or higher-rated unshielded twisted-pair cabling between the two Units, and your basic extension system is ready to go.

If your computer has audio-input and audio-output ports, you can attach either of these to Unit A as well, and use a microphone and/or a pair of stereo speakers or headphones plugged into Unit B to communicate with them.

If you connect a local CPU to Unit B, users at the primary control station will be able to switch between that CPU at their site in addition to the distant primary CPU. And if you connect a local control

station to Unit A, users at that station can contend with those at the primary station (through an inactivity timeout) for access to the primary CPU. (The illustration **above** shows how all this works.)

The Extender carries one more type of data: Units A and B each have a single serial port for connecting one RS-232 serial device. The Extender doesn't support switching of, or contention for, this connection. In fact, serial communication across this link isn't affected in any way by which station is in control of which CPU. You can set the serial link's data rate (to 1200 or 9600 bps), as well as its data format and handshaking.

The video resolution you run can be as high as 1600 x 1280 at up to 100 m (325 ft.); from there the maximum slowly diminishes to 1024 x 768 at 200 m (655 ft.). It's very easy to finely tune the Extender's video compensation, and the Extender saves the compensation setting to EEPROM so you only have to do it once. **Very important:** You will have to set the Extender's video compensation before trying to operate it—the picture will look terrible otherwise.

The Extender supports a wide range of hardware, including IBM PS/2®, PC/AT®, and RS/6000® CPUs; PS/2 and PC/AT keyboards; and PS/2 and RS-232 mice, including the Microsoft® IntelliMouse® and similar "wheel" mice. Some of these connections will require adapters, but as you can see from page 4's What's Included box, the Extender comes with almost all of the cables and adapters you might need for it.

You can configure many, many options on the Extender, including a password that must be entered before the primary control station can be used.

TECH SPECS

Cable Required — Between Units A and B: Four-pair (eight-wire) Category 5 or higher unshielded twisted pair; shielded twisted pair can also be used at shorter distances
Compliance — CE (EN55022 Class A), FCC Part 15 Subpart B Class A, IC Class/classe A
Standards — VGA, SVGA, XGA, or XGA-2 video
Interfaces —
Video: VGA;
Keyboard and mouse: IBM PS/2 compatible; with appropriate adapters, also supports IBM PC/AT keyboard and EIA/TIA RS-232 mouse on these ports;
Serial: EIA/TIA RS-232, pinned according to TIA-574, DCE;
Audio: 3.5-mm stereo
Resolution — At distances to 65 m (210 ft.): Up to 1600 x 1280 noninterlaced at up to 85 Hz;
At distances to 100 m (325 ft.): Up to 1600 x 1280 noninterlaced at up to 60 Hz;
At distances to 200 m (655 ft.): Up to 1024 x 768 noninterlaced at up to 65 Hz
Supported Serial Characteristics —
Transmission protocol: Asynchronous;
Handshaking/device protocol: Mouse (supersedes all other serial settings), hardware, or none, user-selectable;
Data rate: 1200 or 9600 bps, user-selectable;
Data format: 7 or 8 data bits; even, odd, or no parity; and 1 or 2 stop bits; user-selectable
Maximum Distance —
Between Units: Up to 200 m (655 ft.) of unshielded twisted-pair cable or 100 m (325 ft.) of shielded twisted-pair cable;
From Unit A without optional power supply:
2 m (6 ft.) to any attached keyboard, monitor, and mouse;
3 m (10 ft.) to any attached CPU;
10 m (32 ft.) to any attached audio or serial device;
From Unit B or from Unit A with optional power supply:
10 m (32 ft.) to any attached keyboard, monitor, and mouse;
15 m (50 ft.) to any attached audio or serial device;
20 m (65 ft.) to any attached CPU

User Controls — Keyboard commands;
Mouse-click functions;
(1) Side-mounted 8-position DIP switch on each Unit; switches on Units A and B control different options and functions
Indicators —
(3) Top-mounted LEDs:
On Unit A: Power (green), Primary Control (red), and Local Control (red);
On Unit B: Power (green), Primary CPU (red), and Local CPU (red);
Extender also indicates compensation, control-lockout, and password-lockout modes by flashing various patterns on the Num Lock, Caps Lock, and Scroll Lock LEDs of the attached keyboard(s)
Connectors — All side-mounted on both Units A and B (control-station connections optional on Unit A, CPU connections optional on Unit B):
(2) HD15 female: (1) to monitor, (1) to CPU's video port;
(4) 6-pin mini-DIN female: (1) to keyboard, (1) to mouse, (1) to CPU's keyboard port, (1) to CPU's mouse port;
(4) 3.5-mm stereo jacks: (1) to audio-input device [microphone, etc.], (1) to stereo audio-output device [speakers, headphones, etc.], (1) to CPU's audio-in port, (1) to CPU's audio-out port;
(1) DB9 female for serial-device attachment;
(1) Barrel jack for power-supply connection
Power —
Unit A without using included power supply: 5 VDC at 500 mA from attached CPU's keyboard interface;
Unit B or Unit A using included power supply:
Input: 100 to 240 VAC at 50 to 60 Hz from utility-power (mains) outlet, through detachable power cord and IEC 320 inlet, to external transformer;
Output: 5 VDC at up to 2.5 A from transformer to Extender (Extender draws only 500 mA);
Consumption: Typically 2.5 watts by Unit A, 7.5 watts by Unit B
Maximum Altitude — 10,000 ft. (3048 m)
Temperature Tolerance — 32 to 104°F (0 to 40°C)
Humidity Tolerance — 5 to 60% noncondensing
Enclosure — Steel and aluminum
Size — 1.3"H x 6.5"W x 5.6"D (3.3 x 16.5 x 14.2 cm)
Weight: Net — 1.1 lb. (0.5 kg) per Unit;
Shipping: At least 7.5 lb. (3.4 kg)

ACU1600A

What's included

- ✦ The Extender's Unit A.
- ✦ The Extender's Unit B.
- ✦ Unit B's power supply.
- ✦ Unit A's optional power supply.
- ✦ (4) Velcro® mounting strips.
- ✦ (2) Bonded three-to-three CPU-Extension Cables, one 5 ft. (1.5 m) long, one 10 ft. (3 m) long.
- ✦ (4) 2.5-m (8.2-ft.) stereo audio cables, all with 3.5-mm stereo audio plugs. (These will work fine with mono equipment.)
- ✦ (1) PS/2 to PC/AT keyboard adapter, 6-pin mini-DIN female to 5-pin DIN male, for connecting a PC/AT type CPU's keyboard port.
- ✦ (1) PS/2 to serial mouse adapter, 6-pin mini-DIN female to DB9 female, for connecting a PC/AT type CPU's serial mouse port.
- ✦ A users' manual.

Other equipment you may need

- Four-pair (eight-wire) twisted-pair cabling rated to at least Category 5.
- Category 5 surge protectors.
- Control-station equipment (monitor, keyboard, mouse, and/or audio devices).
- Extra keyboard- and mouse-port adapters if you are attaching two PC/AT type computers.
- A keyboard adapter if you actually want to use a PC/AT keyboard.
- Any serial devices, plus any cables and adapters you'll need to connect them. (Please call Black Box Tech Support before attaching any serial devices other than CPU serial ports.)
- A mouse driver for each CPU.

Item	Code
ServSwitch™ Wizard Multimedia KVM Extender	**ACU1600A**
You might also need…	
Solid Unterminated 4-Pair CAT5 UTP Cable, Beige, 1000 ft. (304.8 m)	
PVC	
Spool	**EYN840A-1000**
Box	**EYN840A-B**
Plenum-Rated	
Spool	**EYN860A-1000**
Box	**EYN860A-B**
Pack of 10 RJ-45 Plugs for Terminating CAT5 Cable	**FM732**
CAT5 Surge Protector (use one at each end of the CAT5 cable)	**SP251A**
Serial Cable for Attaching a CPU's Serial Port to One of the Serial Ports on the Extender (specify length)	**EDN12H-MF**
Call Black Box Tech Support to discuss your applicationif you'd like to attach any other type of serial device to an Extender's serial port.	
Rackmount Kit	**RMK19WX**
Keyboard Adapter for a PC/AT Type Keyboard (6-Pin Mini-DIN Female to 5-Pin DIN Male)	**FA211**
Extra/Replacement Keyboard Adapter for PC/AT Type Computers' Keyboard Ports (5-Pin DIN Female to 6-Pin Mini-DIN Male)	**FA212**
Extra/Replacement Mouse Adapter for PC/AT Type Computers' RS-232 Serial Mouse Ports (6-Pin Mini-DIN Female to DB9 Female)	**FA314**
Replacement CPU-Extension Cable, 10 ft. (3 m)	**EHN408-0010**
Call Black Box Tech Support if you ever need replacement audio cables.	
Replacement Power Supply	**PS649**
Call Black Box Tech Support for help determining your best options for AC-power protection.	